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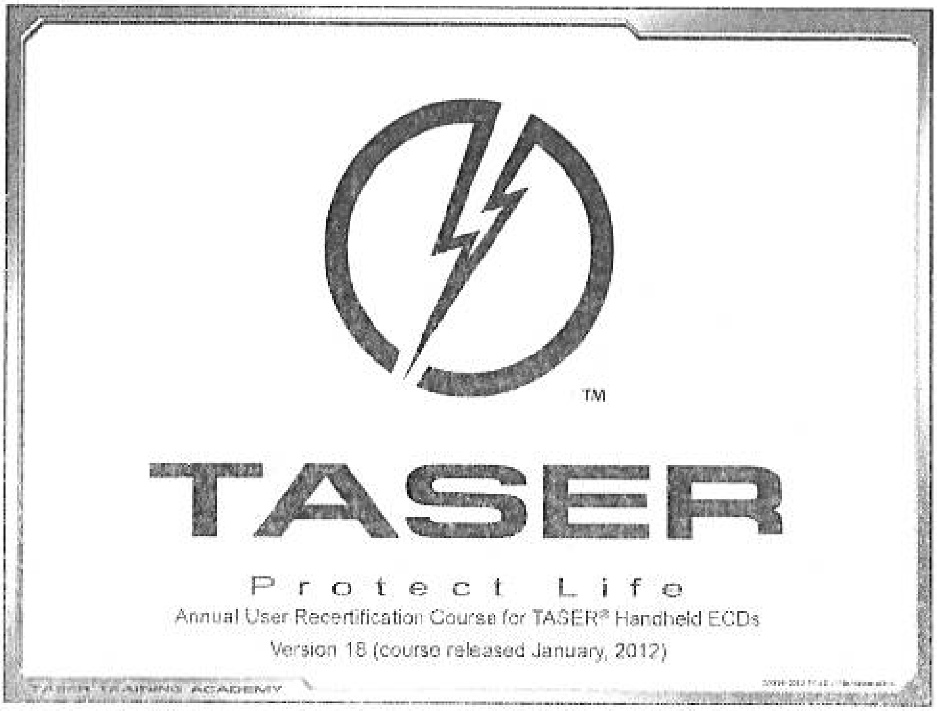
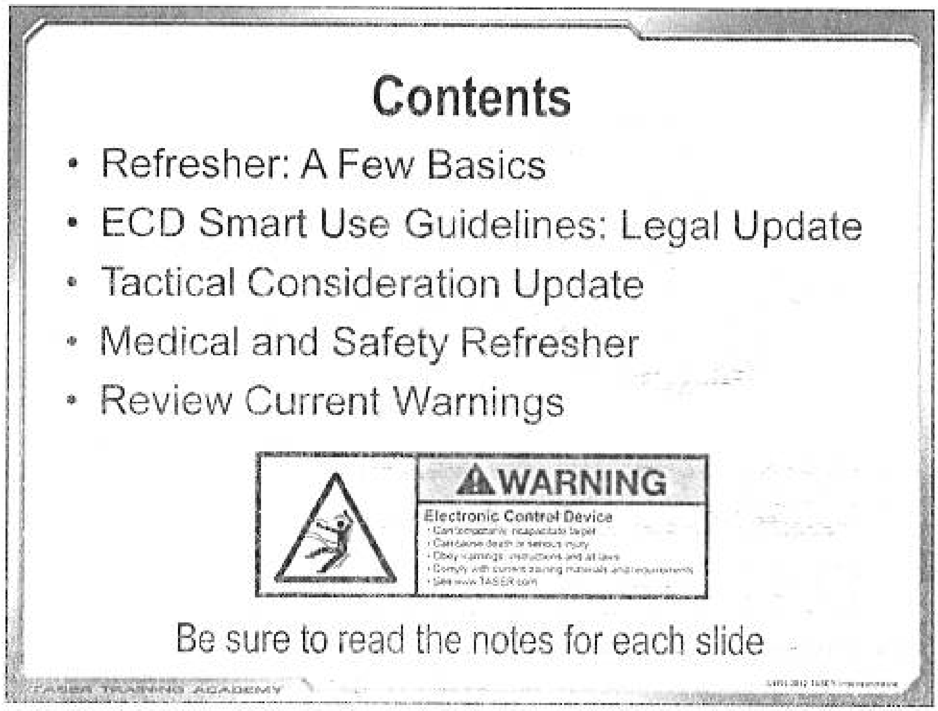

TM
TASER
Protect Life
Annual User Recertification Course for TASER® Handheld ECDs
Version 18 (course released January, 2012)
TASER TRAINING ACADEMY

This course is designed to assist law enforcement agencies in the development of their annual user recertification courses for TASER electronic control devices (ECDs). TASER's annual recertification program requires that users successfully perform manipulation drills and fire 2 cartridges as part of their annual recertification. There is also an optional test available for your consideration.

This course does *not* replace the current ECD User Training Program. Always ensure that you review your department's policies and relevant case law. As with any TASER training, each law enforcement agency is solely responsible for its training programs and use of force policies.

By providing these materials, TASER does not give and is not giving legal advice or guidance or creating or forming any form of attorney/client or other relationship. Be sure to consult with your personal, local, law enforcement agency, or governmental legal advisor for any legal advice, guidance, training, or direction.


Contents
• Refresher: A Few Basics
• ECD Smart Use Guidelines: Legal Update
• Tactical Consideration Update
• Medical and Safety Refresher
• Review Current Warnings
WARNING
Electronic Control Device
Be sure to read the notes for each slide

Current product warnings are available at www.TASER.com.

Refresher: A Few Basics

Do not exceed 15-second exposure without justification

Several police organizations have set out 15 seconds (multiple applications or continuous) of Electronic Control Device (ECD) exposure as a significant safety point:

- Police Executive Research Forum (PERF), Community Oriented Policing Services (COPS), & US Department of Justice (DOJ) (2011)
- Int'l Association of Chiefs of Police (IACP) (2010)
- American Academy of Emergency Medicine (AAEM) (2011)
- National Institute of Justice (NIJ) (2011)

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See the following resources:

- 2011 Electronic Control Weapon Guidelines, A joint project of Police Executive Research Forum and Community Oriented Policing Services, U.S Department of Jusice.

  PERF Guideline 21. "Personnel should use an ECW for one standard cycle (five seconds) and then evaluate the situation to determine if subsequent cycles are necessary. Personnel should consider that exposure to the ECW for longer than 15 seconds (whether due to multiple applications or continuous cycling) may increase the risk of death or serious injury. Any subsequent applications should be independently justifiable, and the risks should be weighed against other force options."

- International Association of Chiefs of Police ("IACP") Model Policy, Electronic Control Weapons, April 2010, and IACP National Law Enforcement Policy Center, Electronic Control Weapons, Concepts and Issues Paper, April 2010.

- Vilke GM, Bozeman WP, Chan TC. Emergency Department Evaluation after Conducted Energy Weapon Use: Review of the Literature for the Clinician. J Emerg Med. May 2011;40(5):598-604.

- Laub J. Study of Deaths Following Electro Muscular Disruption. National Institute of Justice. May 2011.

  "Because the physiologic effects of prolonged or repeated CED exposure are not fully understood, law enforcement officers should refrain, when possible, from continuous activations of greater than 15 seconds, as few studies have reported on longer time frames."

PERF Guideline 21 (03/11)

- An ECD should be used for one standard 5-second cycle and then evaluate the situation to determine if subsequent 5-second ECD cycles are necessary.
- Officer should consider that ECD exposure for longer than 15 seconds (whether due to multiple applications or continuous cycling) may increase the risk of death or serious injury.

See full document: 2011 Electronic Control Weapon Guidelines, A joint project of Police Executive Research Forum and Community Oriented Policing Services, U.S Department of Justice.

PERF Guideline 21 (03/11)

Any subsequent ECD exposure (beyond 15 seconds of multiple applications or continuous cycling) should be independently justifiable, and the risks should be weighed against other force options.

AXON TRAINING ACADEMY

See full document: 2011 Electronic Control Weapon Guidelines, A joint project of Police Executive Research Forum and Community Oriented Policing Services, U.S Department of Justice.

ECD Emergency Dept Evaluation (Vilke 2011)

These studies did not report any evidence of dangerous laboratory abnormalities, physiologic changes, or immediate or delayed cardiac ischemia or dysrhythmias after exposure to ECD electrical discharges of up to 15 seconds.

TASER TRAINING ACADEMY

See, Vilke GM, Bozeman WP, Chan TC. Emergency Department Evaluation after Conducted Energy Weapon Use: Review of the Literature for the Clinician. J Emerg Med. May 2011;40(5):598-604.

See also the full TASER Electronic Control Device Research Index, current version available at www.TASER.com. There are other pieces of literature that have different views, opinions, risks, and conclusions from the Vilke study.

ECD Smart Use Guidelines and Legal Update

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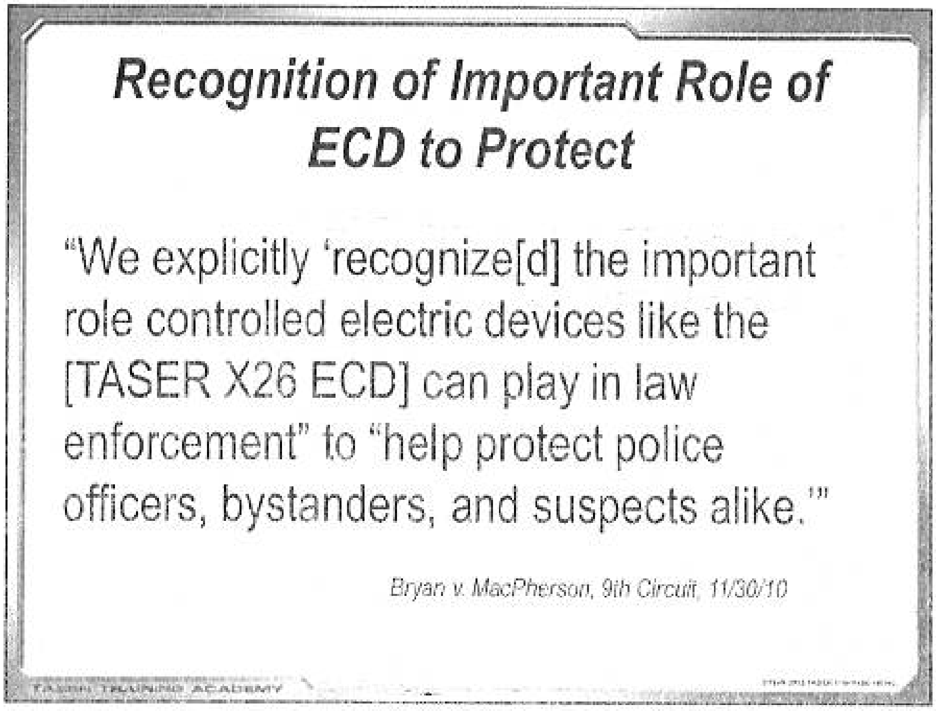
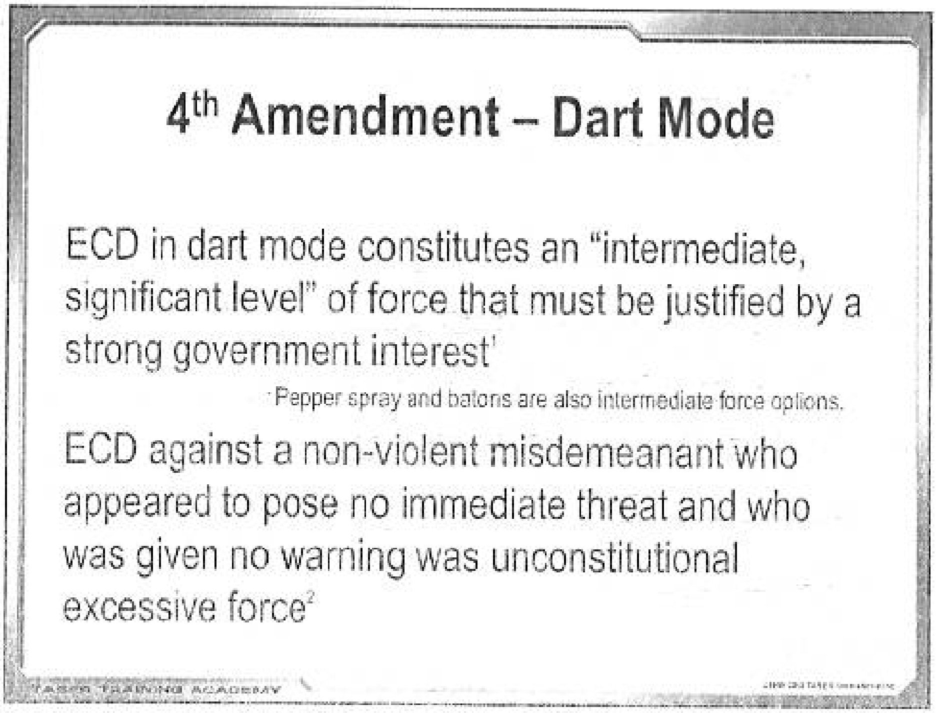
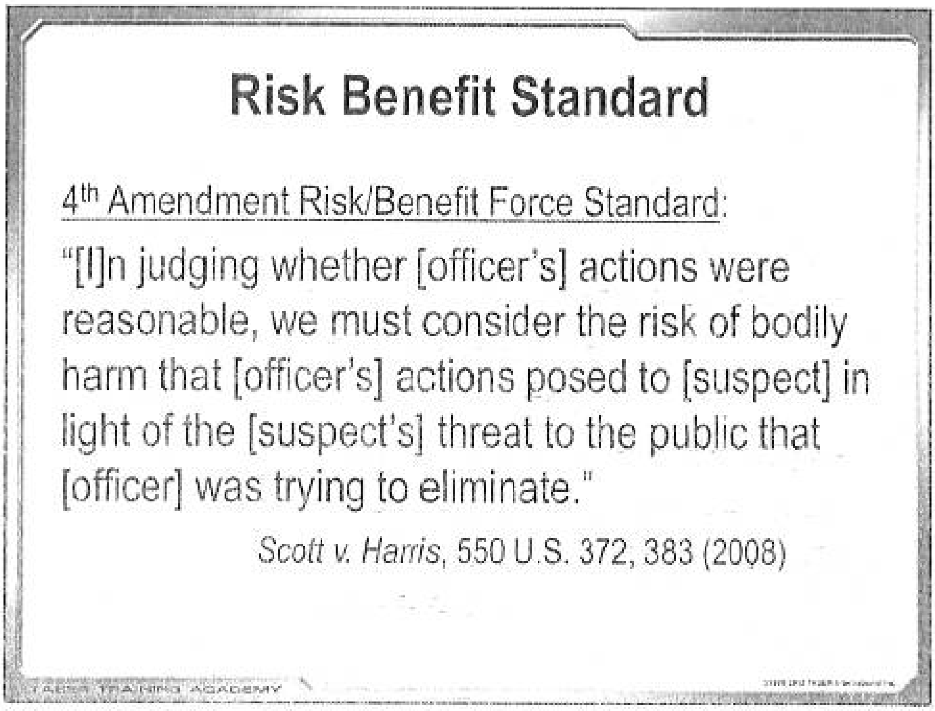
TASER does not give and is not giving legal advice or guidance or creating or forming any form of attorney/client or other relationship. Be sure to consult with your personal, local, law enforcement agency, or governmental legal advisor for any legal advice, guidance, training, or direction.


Recognition of Important Role of ECD to Protect
"We explicitly 'recognize[d] the important role controlled electric devices like the [TASER X26 ECD] can play in law enforcement" to "help protect police officers, bystanders, and suspects alike.'"
Bryan v. MacPherson, 9th Circuit, 11/30/10
TASER TRAINING ACADEMY

Bryan v. MacPherson, 630 F.3d 805, *dissent*, at 818 (9th Cir. (Cal.), November 30, 2010), quoting *Bryan*, 608 F.3d at 622.


4th Amendment – Dart Mode
ECD in dart mode constitutes an "intermediate, significant level" of force that must be justified by a strong government interest[1]
[1] Pepper spray and batons are also intermediate force options.
ECD against a non-violent misdemeanant who appeared to pose no immediate threat and who was given no warning was unconstitutional excessive force[2]
TASER TRAINING ACADEMY

1. *Bryan v. MacPherson*, 630 F.3d 805 (9th Cir. (Cal.), November 30, 2010).
2. *Id.*, quoting *Cavanaugh v. Woods Cross City*, 625 F.3d 661 (10th Cir. (Utah) November 3, 2010).


Risk Benefit Standard
4th Amendment Risk/Benefit Force Standard:
"[I]n judging whether [officer's] actions were reasonable, we must consider the risk of bodily harm that [officer's] actions posed to [suspect] in light of the [suspect's] threat to the public that [officer] was trying to eliminate."
Scott v. Harris, 550 U.S. 372, 383 (2008)
TASER TRAINING ACADEMY

Scott v. Harris, 550 U.S. 372, 383 (2007).

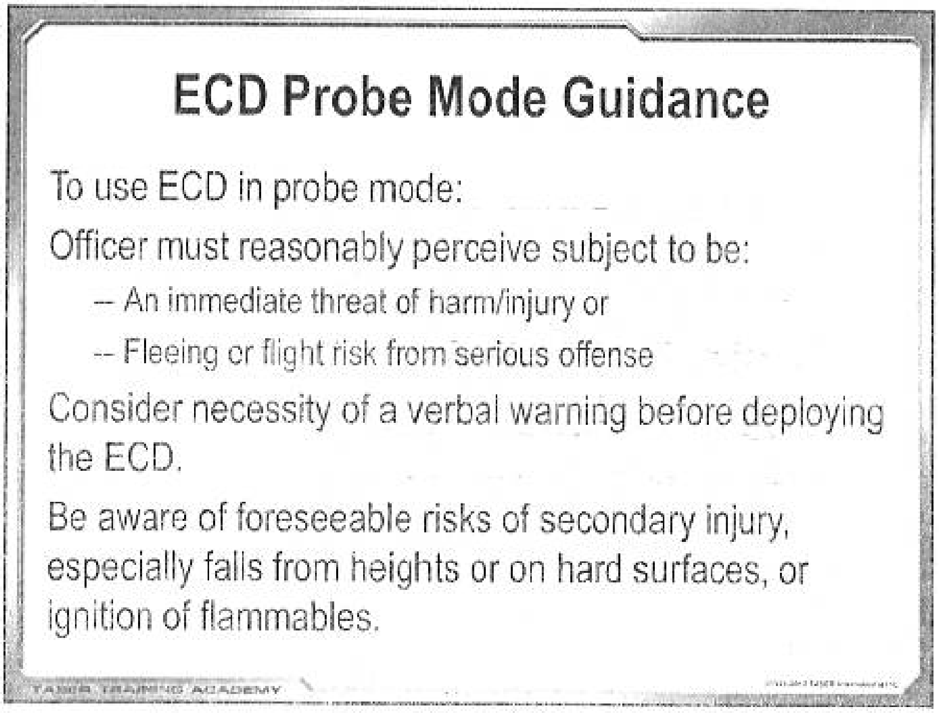
- In determining reasonableness of the manner in which a seizure is effected, we must balance the nature and quality of the intrusion on the individual's 4th Amendment interests against the importance of the governmental interests alleged to justify the intrusion.

"Quantum of Force"

"***Quantum of force***" basically means:

the reasonably foreseeable (to the officer) effects and injuries of a chosen force option under the totality of the circumstances of the force option use

TASER TRAINING ACADEMY


ECD Probe Mode Guidance
To use ECD in probe mode:
Officer must reasonably perceive subject to be:
-- An immediate threat of harm/injury or
-- Fleeing or flight risk from serious offense
Consider necessity of a verbal warning before deploying the ECD.
Be aware of foreseeable risks of secondary injury, especially falls from heights or on hard surfaces, or ignition of flammables.
TASER TRAINING ACADEMY

See the product warnings, product manual, TASER Training DVD, and ECD Research index for full details/information on the risks of ECD use.

Bryan v. MacPherson, 630 F.3d 805 (9th Cir. (Cal.), November 30, 2010) (quoting *Cavanaugh v. Woods Cross City*, 625 F.3d 661 (10th Cir. (Utah) 2010) (Graham factors clearly cautioned against a significant use of force, such as the deployment of a[n ECD]!

See also, numerous court decisions which found that use of ECD in probe mode is at least an intermediate, if nonlethal, level of force:

-*Cockrell v. City of Cincinnati*, Slip Copy, 2010 WL 4918725 (S.D.Ohio, November 24, 2010)

-*Oliver v. Fiorino*, 586 F.3d 898, 903 (11th Cir. 2009) (ECD "designed to cause significant, uncontrollable muscle contractions")

-*Orem v. Rephann*, 523 F.3d 442, 447-48 (4th Cir. 2008) (rejecting that ECD constitutes minor or *de minimus* level of force)

-*Hickey v. Reeder*, 12 F.3d 754, 757 (8th Cir. 1993) (stun gun inflicts painful and frightening blow, which temporarily paralyzes the large muscles of the body, rendering the victim helpless)

-*Crowell v. Kirkpatrick*, 667 F.Supp.2d 391, 408 (D.Vt. 2009) (ECDs have "been described by other courts as 'moderate, non-lethal force" and cause "acute-even *severe*-physical pain")

-*Orsak v. Metro. Airports Comm'n*, 675 F.Supp.2d 944, 957-59 (D.Minn. 2009)

-*Cyrus v. Town of Mukwonago*, 2009 WL 1110413, at *21 (E.D. Wis. April 24, 2009) ("use of a[n ECD] as an intermediate or medium, though not insignificant, quantum of force...."); *see also Cyrus v. Town of Mukwonago*, 624 F.3d 856 (7th Cir. (Wis.) 2010)

-*Kondy v. City of Sandy*, 2008 WL 5111101, at *16 (D.Or. Nov. 26, 2008) (use of a[n ECD] constitutes an intermediate level of force and a significant intrusion on a victim's 4th Amendment rights.)

-*McDonald v. Pon*, 2007 WL 4420936, at *2 (W.D.Wash. Dec. 14, 2007) ("[ECD] use is considered an intermediate control tactic.")

-*Beaver v. City of Federal Way*, 507 F.Supp.2d 1137, 1144 (W.D.Wash.2007) ("use of a[n ECD] constituted significant force."); *see also Beaver v. City of Federal Way*, 301 Fed.Appx. 704 (9th Cir. (Wash), November 25, 2008)

-*Parker v. City of South Portland*, 2007 WL 1468658, at *22 (D.Me. 2007) ("In the circumstances, the [ECD] fairly can be characterized-as it has been by one court-as a significantly violent level of force."), *see also Parker v. Gerrish*, 547 F.3d 1 (1st Cir. (Me.) 2008)

-*DeSalvo v. City of Collinsville*, 2005 WL 2487829, at *4 (S.D.Ill. 2005)

-*Brown v. City of Golden Valley*, 574 F.3d 491 (8th Cir. (Minn.) 2009)

-*Casey v. City of Federal Heights*, 509 F.3d 1278 (10th Cir. (Colo.) 2007)

-*Mann v. TASER International, Inc.*, 588 F.3d 1291 (11th Cir. (Ga.) 2009)

X26 ECD Drive-Stun Guidance
(Using Force to Gain Volitional Compliance)
Using force for volitional compliance (when feasible):
• Verify person is capable of complying
• Avoid conflicting commands
• Must give a warning of imminent force application
• Must give adequate time for volitional compliance:
– time "to recover from extreme pain" experienced,
– opportunity to "gather herself,"
– opportunity to "consider her refusal to comply" with officer's commands/directives before next force application
• Always prepare clear, complete, unambiguous reports
TASER TRAINING ACADEMY

See *Mattos v. Agarano*, 661 F.3d 433 (9th Cir. (Hawaii), October 17, 2011) [includes the *Brooks v. Seattle* (WA) *en banc* decision].

X26 ECD Drive-Stun Guidance

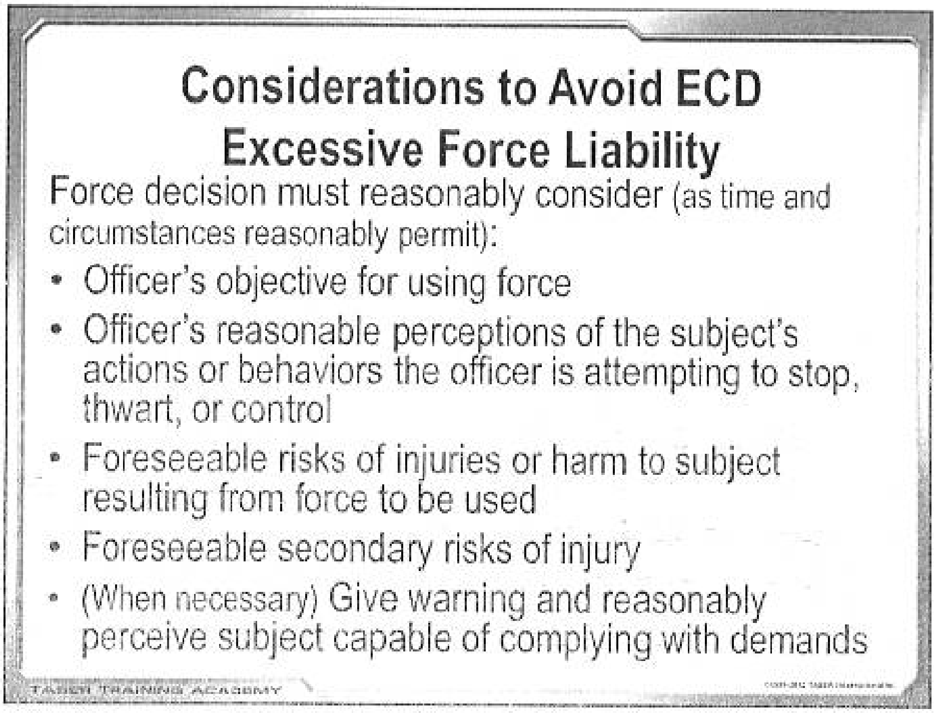
(Using (ECD) Force to Gain Volitional Compliance)

Person must be given a reasonable opportunity to comply with officer's directives prior to each ECD drive-stun application.

For example, the 9th Cir.[1] has found that 3 X26 ECD drive-stun applications in rapid succession provided no time for a pregnant female to recover from the extreme pain she experienced, gather herself, and reconsider her refusal to comply.

TASER TRAINING ACADEMY

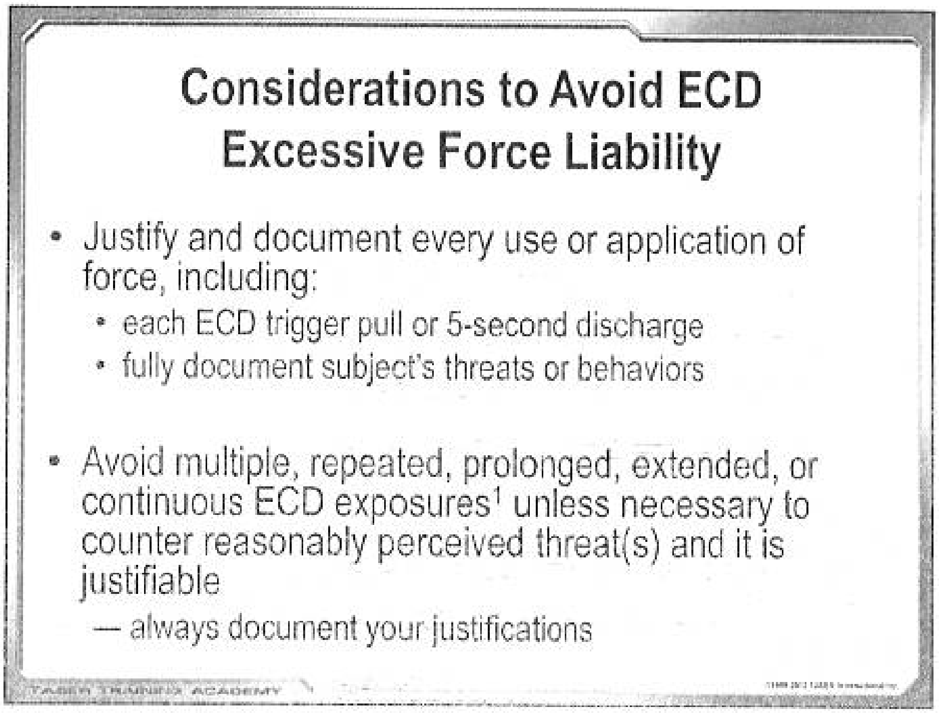
1. See *Mattos v. Agarano*, 661 F.3d 433 (9th Cir. (Hawaii), October 17, 2011) [includes the *Brooks v. Seattle* (WA) case]


Considerations to Avoid ECD Excessive Force Liability
Force decision must reasonably consider (as time and circumstances reasonably permit):
• Officer's objective for using force
• Officer's reasonable perceptions of the subject's actions or behaviors the officer is attempting to stop, thwart, or control
• Foreseeable risks of injuries or harm to subject resulting from force to be used
• Foreseeable secondary risks of injury
• (When necessary) Give warning and reasonably perceive subject capable of complying with demands
TASER TRAINING ACADEMY

Considerations to Avoid ECD Excessive Force Liability

- Every ECD trigger pull or 5 seconds of discharge must be justified under the specific circumstances
- Use 5-second "window of opportunity" to restrain and "cuff under power" and follow targeting guidelines
- ECD use is within Law and Agency Policy/Training
- Use ECD only to accomplish lawful objectives
- Do not use ECD only for verbal defiance/belligerence
- Do not use ECD for punishment

TASER TRAINING ACADEMY


Considerations to Avoid ECD Excessive Force Liability
• Justify and document every use or application of force, including:
• each ECD trigger pull or 5-second discharge
• fully document subject's threats or behaviors
• Avoid multiple, repeated, prolonged, extended, or continuous ECD exposures[1] unless necessary to counter reasonably perceived threat(s) and it is justifiable
— always document your justifications
TASER TRAINING ACADEMY

Numerous allegations of misuse regarding ECD deployment/use emanate from allegations including:

- ECD deployment(s) where it is alleged that the ECD should not have been deployed/used at all -- that ECD use was not justified.
- ECD deployment(s) on a person in a special population (such as with a mental illness).
- Multiple ECD deployments in drive-stun mode where the ECD can only foreseeably be utilized for discomfort compliance.
- Repeated, extended, prolonged, or continuous ECD deployments where it is alleged that the officer(s) had opportunities to control ("window of opportunity" to "cuff under power") and failed to do so.

Thus, it is important for officers to fully understand and appreciate:

- Their objectives in deploying/discharging an ECD;
- Whether they can legally deploy/discharge an ECD;
- How many ECD deployments or discharges are legally acceptable; and
- Whether the officers have taken reasonable and appropriate steps/actions to appropriately minimize the number of ECD exposures/discharges; including utilizing the "window of opportunity" and "cuffing under power".

1. Bozeman W, II WH, Heck J, Graham D, Martin B, Winslow J., Safety and Injury Profile of Conducted Electrical Weapons Used by Law Enforcement Officer Against Criminal Suspects, Annals of Emergency Medicine, January 2009, defines ECD

discharge by duration as: "standard (5-second), prolonged (15-second), and extended (up to 45-second)" discharges.

Considerations to Avoid ECD Excessive Force Liability

- Know your objectives for using force
- Avoid using ECD on elevated risk population member, unless necessary and justifiable
- Avoid intentionally targeting sensitive areas when possible
- Do not use pain compliance if circumstances dictate that pain is reasonably foreseeably ineffective

TASER TRAINING ACADEMY

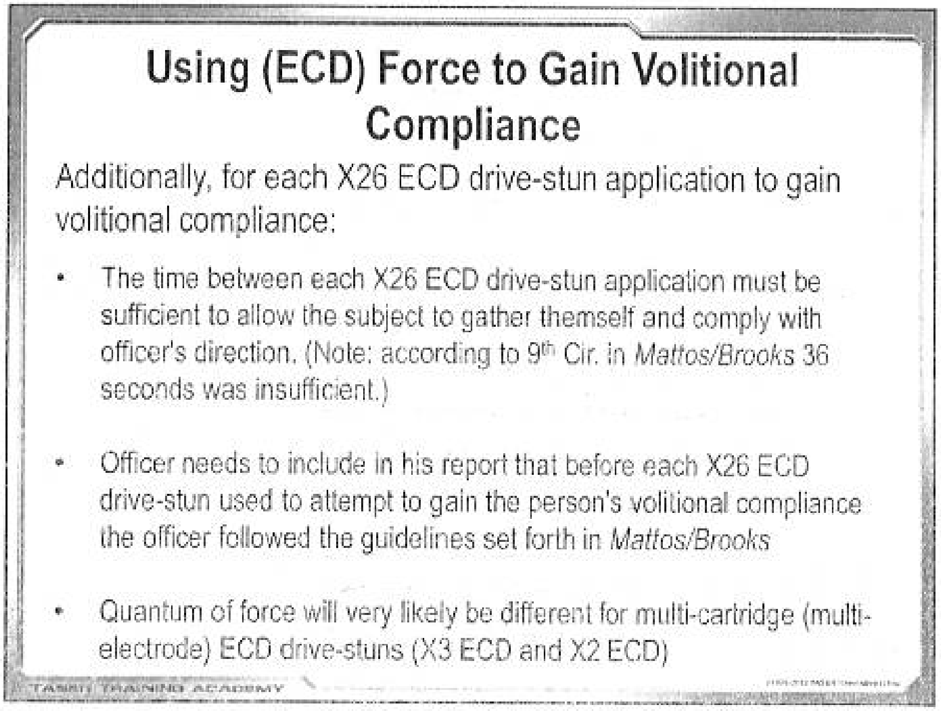
Using (ECD) Force to Gain Volitional Compliance

For each X26 ECD drive-stun application to gain volitional compliance, the officer must:

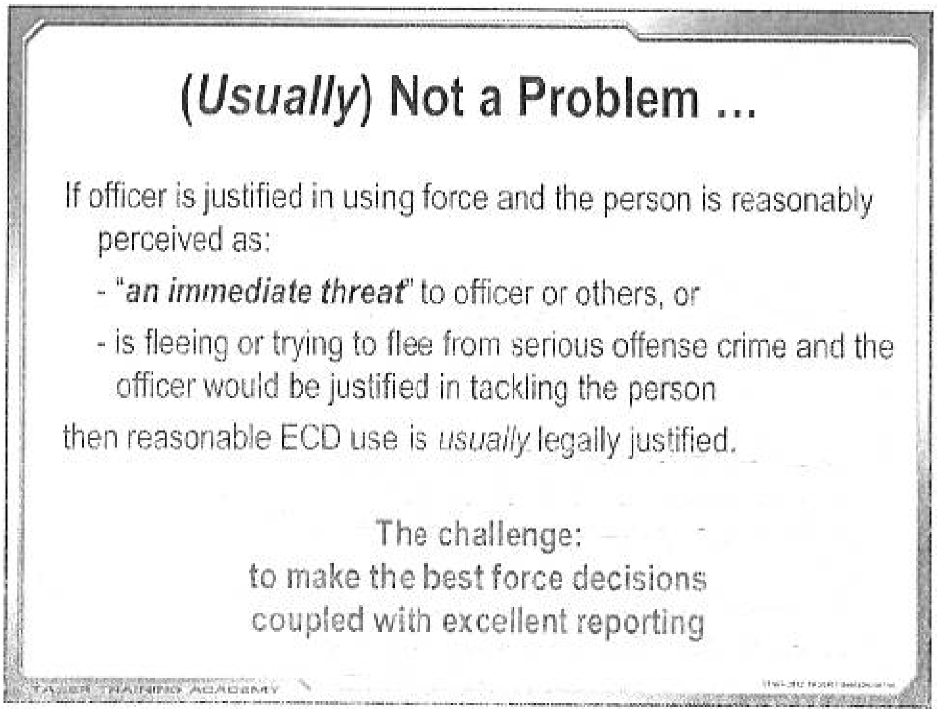
1. have a reasonable perception that the person is capable of volitional compliance to commands
2. reasonably perceive the person is actively resisting
3. give a warning of the imminent application of force
4. give the person a reasonable:
   - time "to recover from extreme pain" experienced,
   - opportunity to "gather herself,"
   - opportunity to "consider her refusal to comply" with officer's commands/directives

See *Mattos v. Agarano*, 661 F.3d 433 (9th Cir. (Hawaii), October 17, 2011) (includes the *Brooks v. Seattle* (WA) case)

In the *Brooks* matter the court found that she "actively resisted arrest insofar as she refused to get out of her car when instructed to do so and stiffened her body and clutched her steering wheel to frustrate the officers' efforts to remove her from her car."


Using (ECD) Force to Gain Volitional Compliance
Additionally, for each X26 ECD drive-stun application to gain volitional compliance:
• The time between each X26 ECD drive-stun application must be sufficient to allow the subject to gather themself and comply with officer's direction. (Note: according to 9th Cir. in Mattos/Brooks 36 seconds was insufficient.)
• Officer needs to include in his report that before each X26 ECD drive-stun used to attempt to gain the person's volitional compliance the officer followed the guidelines set forth in Mattos/Brooks
• Quantum of force will very likely be different for multi-cartridge (multi-electrode) ECD drive-stuns (X3 ECD and X2 ECD)
TASER TRAINING ACADEMY

See *Mattos v. Agarano*, 661 F.3d 433 (9th Cir. (Hawaii), October 17, 2011) [includes the *Brooks v. Seattle* (WA) case]


(Usually) Not a Problem ...
If officer is justified in using force and the person is reasonably perceived as:
- "an immediate threat" to officer or others, or
- is fleeing or trying to flee from serious offense crime and the officer would be justified in tackling the person
then reasonable ECD use is usually legally justified.
The challenge:
to make the best force decisions
coupled with excellent reporting
TASER TRAINING ACADEMY

See *Cockrell v. City of Cincinnati*, Slip Copy, 2010 WL 4918725 (S.D.Ohio, November 24, 2010)

Beaver v. City of Federal Way

1. **The use of an ECD involves the application of force.**
   - Each use of force [including each ECD cycle or 5 seconds of discharge] on a person that is a 4th Amendment seizure is the application of force and must be objectively reasonable.
2. **Each additional ECD [5 seconds of] application involves an additional use of force.**
   - This is true of any use of force.

TASER TRAINING ACADEMY

See Beaver v. City of Federal Way, 507 F.Supp.2d 1137 (W.D.Wash. 2007); (qualified immunity upheld by 301 Fed.Appx. 704 (9th Cir. (Wash.) 2008)). The *Beaver* case is an excellent example of where courts are headed in analyzing law enforcement force events.

Beaver v. City of Federal Way

3. **Multiple ECD applications [each 5 seconds of discharge] cannot be justified solely on the grounds that a suspect fails to comply with a command, absent other indications that the suspect is an *immediate threat or about to flee* [from a serious crime].**

- This is particularly true when more than one officer is present to assist in controlling a situation.

TASER TRAINING ACADEMY

See *Beaver v. City of Federal Way*, 507 F.Supp.2d 1137 (W.D. Wash. 2007); (qualified immunity upheld by 301 Fed.Appx. 704 (9th Cir. (Wash.) 2008). The *Beaver* case is an excellent example of where courts are headed in analyzing law enforcement force events.

In the example of an unarmed suspect who threatens an officer and is incapacitated by an ECD, then, after each 5-second cycle has ended, refuses to put his hands behind his back but makes no attempt to get up and is not known to be armed, additional 5-second ECD cycles might not be justified absent other indications he is an immediate threat. This is particularly true when more than one officer is present to assist in controlling a situation. The number of officers and the number of suspects is frequently one factor considered by the courts in determining the level of risk faced by the officer and what would be considered reasonable force.

Beaver v. City of Federal Way

4. **Any decision to apply multiple ECD [5 second] applications must take into consideration whether a suspect is capable of complying with officers' commands.**

- This would apply to whether a suspect is capable of complying: physically, emotionally, language barrier, mental condition, etc.

TASER TRAINING ACADEMY

See Beaver v. City of Federal Way, 507 F.Supp.2d 1137 (W.D.Wash. 2007); (qualified immunity upheld by 301 Fed.Appx. 704 (9th Cir. (Wash.) 2008). The *Beaver* case is an excellent example of where courts are headed in analyzing law enforcement force events.

Note that in the *Beaver* case, the court found that the officers gave conflicting commands.

Multiple ECD Applications

Is the suspect capable of complying with commands?

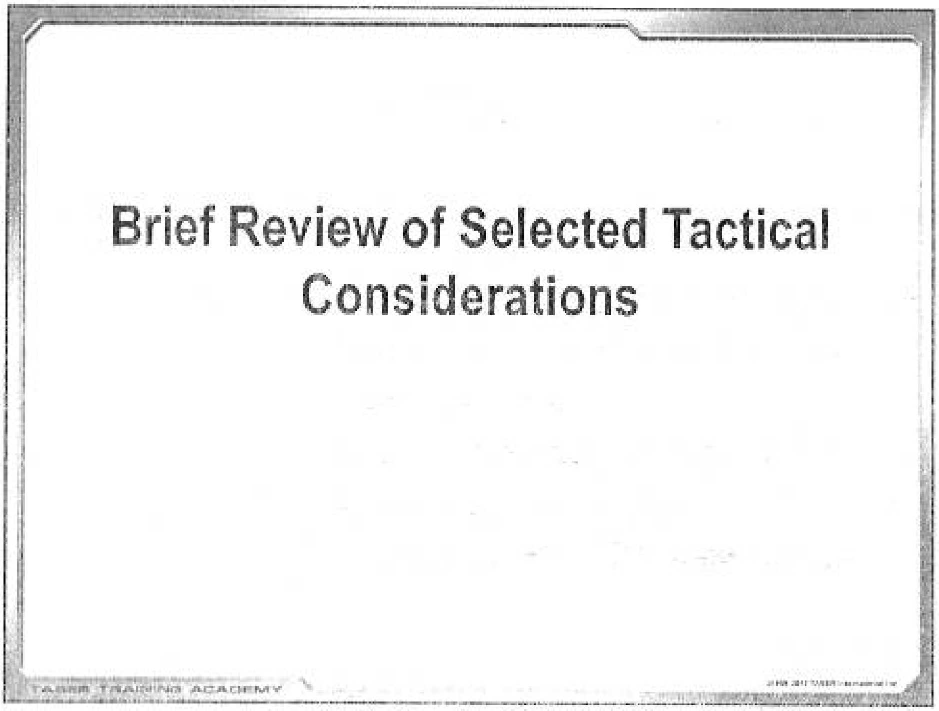
Any decision to apply multiple ECD [5-second] applications to gain volitional compliance must consider whether suspect is capable of complying with commands.

- Physically? (*Beaver*)
- Mentally (intoxication, schizophrenic, etc.)?
- Emotionally? (*Buckley, Brown*)
- Conflicting commands? (*Beaver*, *Releford*)

TASER TRAINING ACADEMY

See:

Mattos v. Agarano, 661 F.3d 433 (9th Cir. (Hawaii), October 17, 2011).
Buckley v. Haddock, 292 Fed.Appx. 791 (11th Cir. (Fla.) 2008), *cert denied* May 18, 2009.
Brown v. City of Golden Valley, 574 F.3d 491 (8th Cir. (Minn) 2009).
Releford v. City of Tukwila, CASE NO. C07-2009-RSM (W.D.Wash. 2008).


Brief Review of Selected Tactical Considerations
TASER TRAINING ACADEMY

Spark Test

- Conduct spark test prior to the start of your shift
- One spark (1/19th of a second) is adequate. However, this is not a practical duration. As long as the officer sees a visible spark between the electrodes, it is not necessary to extend the duration. In most cases, less than one second.
- The reason for the spark test is:
  - To check that the ECD is sparking.
  - To check the battery's performance.
  - There are components in the high voltage section of some older X26 ECDs that are more reliable when energized ("conditioned") on a regular basis.

TASER TRAINING ACADEMY

Conduct a spark test of the X26 ECD before you start your shift. This is to ensure that the ECD is functioning properly, to make sure the batteries are performing adequately and also there are components in the high voltage section that are more reliable when energized or ("Conditioned") on a regular basis. When performing a spark test make sure you look and listen for the arc, meaning you see the arcing and you hear the pulse rate. You will know how the 19 pulses per second spark rate should sound after you fire the ECD a few times. You will know if the pulse rate drops below the 19 pulses per second. Technically one spark or 1/19th of a second should be adequate to ensure the ECD is functioning but this is not practical. A 1-2 second spark test is adequate.

****

Our primary concern is officer safety. While it is not possible to guarantee that any ECD will function properly, we continually strive for the highest level of quality and reliability. However, nothing can replace an operational check of the ECD for functionality and possibility of an ECD failure during field deployment. We are also sensitive to the cost associated with the use of the DPM (Digital Power Magazine) and have tried to minimize the test requirements without compromising officer safety.

The only way to determine the proper functioning of all components is to conduct a daily spark test. There is no display or other method to verify proper ECD operation other than seeing the actual spark between the electrodes.

The X26 ECD is a highly sophisticated electronic device. We build the ECDs to be robust. However, there are many times that they are subject to extreme conditions in the field including dropping, exposure to significant moisture, etc. Any of these factors could damage an internal component without any external indication. Conducting a daily spark test helps to check the proper operation of components.

While the CID readout of battery life is accurate, there is a possibility that the battery could be discharged outside the ECD (e.g., if the DPM is improperly stored the metal contacts may be shorted out) and this would not affect the displayed percentage, even though the DPM is unintentionally depleted. The daily spark test is to assist in adequately confirming DPM strength.

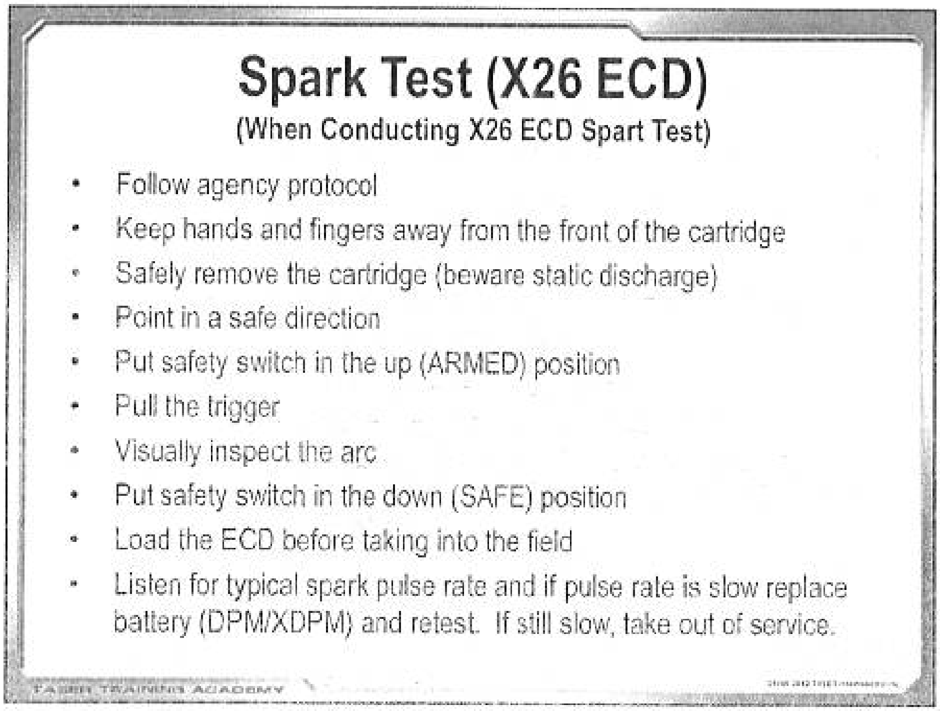
TASER requires a spark test prior to each shift or a minimum of once per work day. It is not necessary to spark test the ECD on days off, as long as a spark test is conducted prior to the start of the next shift.

There are several possibilities that can result from the failure of an internal component of the ECD, including but not limited to: (1) complete failure of the ECD including no spark and no LASER or LED; (2) the LASER and/or LED function properly, but the ECD fails to spark; (3) when the trigger is pulled, the countdown on the CID is normal, but the ECD delays a second or more before beginning to spark; or (4) partial power or low pulse rate.

The life expectancy of the DPM is based primarily on the number of pulses. If the spark test is conducted for one second or less per day, the DPM would not have to be replaced for approximately 3 years; however, upgrade the software as available.

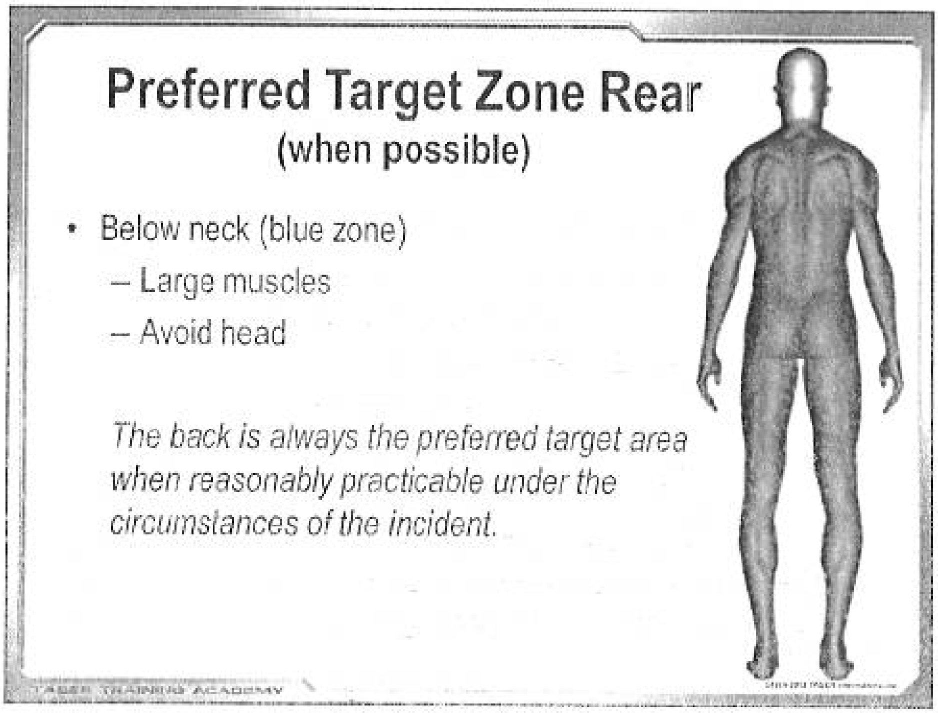
If the ECD does not pass the spark test, contact TASER for return authorization. The customer support number is 800.978.2737. Also, we have a troubleshooting guide on our website at www.TASER.com. Click on the technical support icon for a link to the troubleshooting guide. This may help correct some problems without the need to return the ECD to the factory.

Departments should review ECD data downloads to review officers turning off their ECD after one second during the spark test and transferring this practice to the field. Some departments have officers do their spark test while holding the ECD in their non-dominant hand facing downward but still maintaining a visual on the spark. This method helps minimize bad muscle memory. Others require the supervisor to conduct all spark tests.


Spark Test (X26 ECD)
(When Conducting X26 ECD Spart Test)
• Follow agency protocol
• Keep hands and fingers away from the front of the cartridge
• Safely remove the cartridge (beware static discharge)
• Point in a safe direction
• Put safety switch in the up (ARMED) position
• Pull the trigger
• Visually inspect the arc
• Put safety switch in the down (SAFE) position
• Load the ECD before taking into the field
• Listen for typical spark pulse rate and if pulse rate is slow replace battery (DPM/XDPM) and retest. If still slow, take out of service.
TASER TRAINING ACADEMY

When conducting your daily spark test, always follow agency protocol and remember these important steps:

- Follow agency protocol
- Keep hands and fingers out from front of the cartridge
- Unholster the ECD and safely remove the cartridge (beware static discharge)
- Point the ECD in a safe direction
- Put the safety switch in the up (ARMED) position
- Pull the trigger
- Visually as well as audibly inspect the arc
- If the ECD does not function properly, DO NOT take it into the field. Turn it in to the appropriate person for repair or replacement
- If the ECD functions properly:
    - Put the safety switch in the down (SAFE) position
    - Load and holster the ECD
- Listen for typical spark pulse rate and if pulse rate is slow replace battery (DPM/XDPM) and retest. If still slow, take out of service.

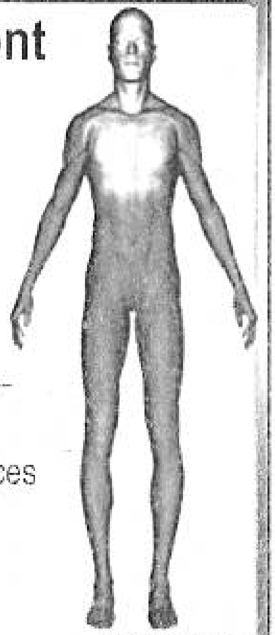

Preferred Target Zone Rear
(when possible)
• Below neck (blue zone)
– Large muscles
– Avoid head
The back is always the preferred target area when reasonably practicable under the circumstances of the incident.
TASER TRAINING ACADEMY

Because of the larger muscle groups, the preferred target zone on the back begins just below the neck and extends all the way down the legs.

Preferred Target Zone Front
(when possible)

Lower torso (blue zone)

- More effective
  - Split hemisphere
  - Larger Muscles
- Reduces risk of hitting sensitive body areas – Refer to current product warnings
- Increases dart-to-heart safety margin distances
- Do not intentionally target genitals



TASER TRAINING ACADEMY

Target Zone:

There have been some ineffective hits to the front of the body, particularly with hits to the upper torso with narrow probe spreads. By lowering the point of aim to the lower torso on the front of the body by about four inches (4"), the potential for Neuro Muscular Incapacitation (NMI) is often increased by splitting the hemispheres of the body and targeting larger muscle groups. Aiming for the lower torso also reduces the risk of hitting some sensitive body areas.

Non-preferred target zones are NOT prohibited, rather they should be avoided when practical.

Dart-to-heart distance:

Experts have identified the heart-to-dart distance and whether the probes traverse the heart (transcardiac) as being key determining factors in whether an ECD can affect the heart. The ventricular fibrillation (VF), ventricular tachycardia (VT), and cardiac capture or pacing probability for given dart locations decreased with the dart-to-heart horizontal distance (radius) on the skin surface. The further an ECD dart is away from the heart, the lower the risk of affecting the heart.

The risk of an ECD causing cardiac arrest in humans is not zero, but is sufficiently remote that making accurate estimates is very difficult. Current estimates of the risk are on the order of 1 in 100,000 applications.

- See, Kroll M, Lakkireddy D, Rahko P, Panescu D. Ventricular Fibrillation Risk Estimation for Conducted Electrical Weapons: Critical Convolutions. Medline IEEE 2011.

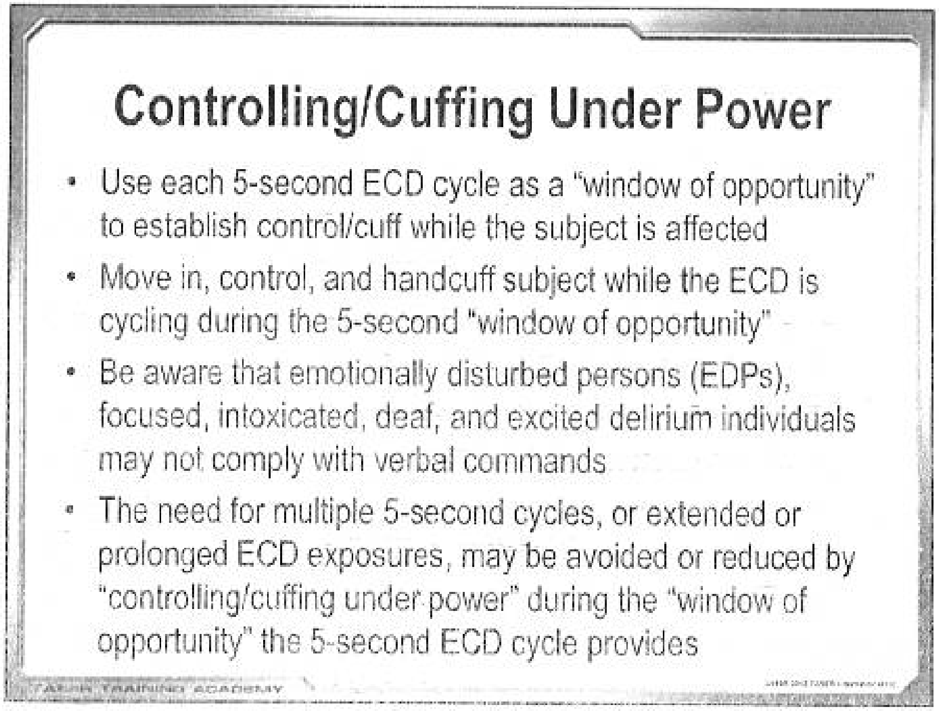
- Sun H, Haemmerich D, Rahko PS, Webster JG. Estimating the probability that the Taser directly causes human ventricular fibrillation. J Med Eng Technol. Apr 2010;34(3):178-191.

Neuro-Muscular Incapacitation (NMI)

- There are different levels of NMI ranging from limited area effects to significant body lockup
- The greater probe spread, the higher likelihood of NMI
- ECDs may not achieve total NMI incapacitation
- Subject may maintain muscle control, particularly in arms and legs (depending on many factors, including probe locations)
- Be prepared with other force options including a drive-stun follow up to spread NMI over a wider area if necessary and reasonably appropriate
- Drive stun usually will not achieve NMI, only localized pain

TASER TRAINING ACADEMY

Even with both probes making contact in a preferred target zone with a large spread, a subject may be able to voluntarily move his arms and legs. The subject might be able to access and manipulate a weapon or strike/kick at an approaching officer. When reasonably safe and practicable, officers should attempt to gain physical control of a subject as quickly as possible to restrict their movement and minimize any threats.


Controlling/Cuffing Under Power
Use each 5-second ECD cycle as a "window of opportunity" to establish control/cuff while the subject is affected
Move in, control, and handcuff subject while the ECD is cycling during the 5-second "window of opportunity"
Be aware that emotionally disturbed persons (EDPs), focused, intoxicated, deaf, and excited delirium individuals may not comply with verbal commands
The need for multiple 5-second cycles, or extended or prolonged ECD exposures, may be avoided or reduced by "controlling/cuffing under power" during the "window of opportunity" the 5-second ECD cycle provides
TASER TRAINING ACADEMY

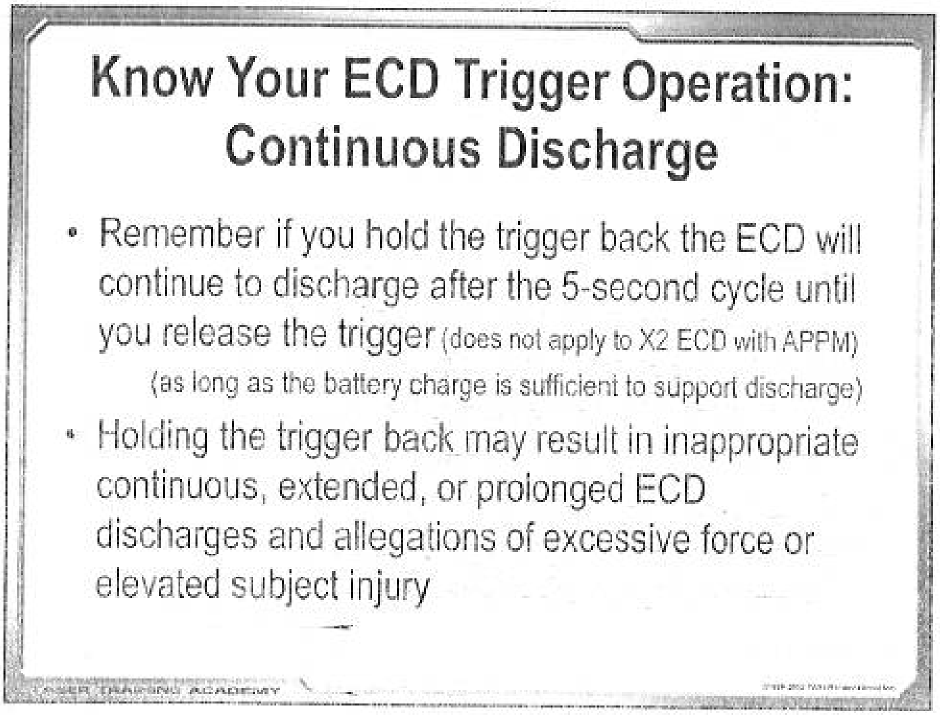
There have been incidents where subjects have been exposed to multiple TASER ECD cycles because the subject would not comply with verbal surrender commands following a TASER ECD deployment. Contact officers were available but did not move in during the cycle while the subject was incapacitated. While there are circumstances under which multiple cycles may be appropriate and reasonable, officers should consider an attempt to move in and control the subject while the TASER ECD is cycling and it is practical and reasonably safe to do so.

Remember, as with any application of force, each ECD (5-second) cycle, deployment, or trigger pull must be legally justified.

Be Careful of Distractions

- There are incidents/cases where officers have been accused of using excessive ECD exposures caused by distractions (including by nearby family members, bystanders, incident witnesses), stress, etc.
- Be alert to and avoid potential or occurring distractions and stress induced hesitations that result in unnecessary additional 5-second ECD cycles or extended exposures
- Distraction and stress may result in the officer inadvertently holding the trigger down unintentionally which will result in a constant electrical discharge of unintended duration

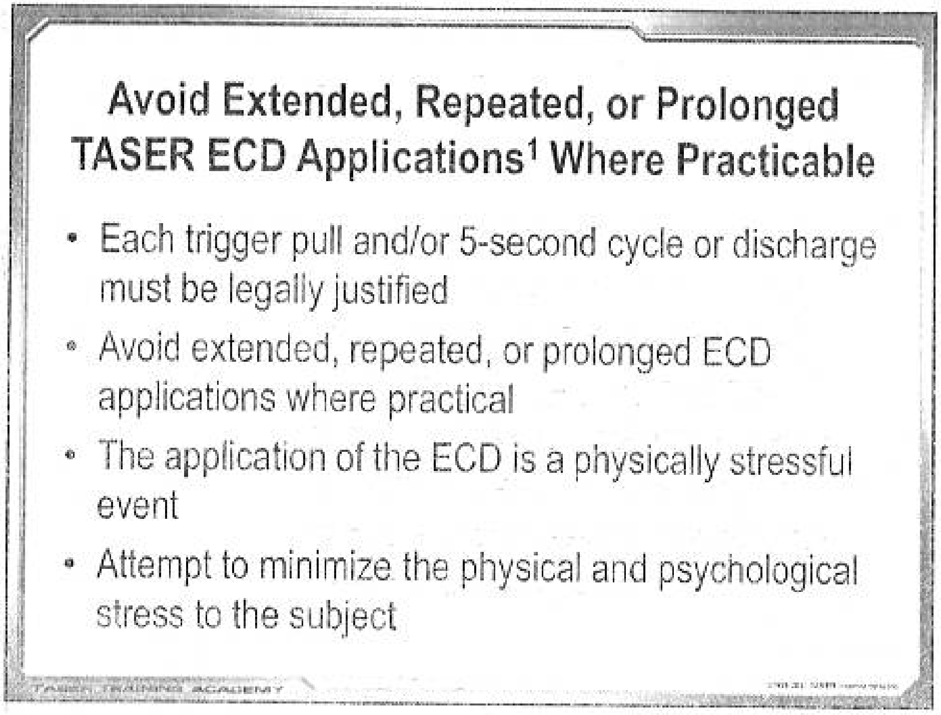
TASER TRAINING ACADEMY


Know Your ECD Trigger Operation: Continuous Discharge
• Remember if you hold the trigger back the ECD will continue to discharge after the 5-second cycle until you release the trigger (does not apply to X2 ECD with APPM)
(as long as the battery charge is sufficient to support discharge)
• Holding the trigger back may result in inappropriate continuous, extended, or prolonged ECD discharges and allegations of excessive force or elevated subject injury
TASER TRAINING ACADEMY

Review the trigger operation of your particular ECD model (all TASER ECD models do not operate the same).

Trigger-Held Continuous Discharge. If an ECD's trigger is held back (on all but the X2 ECD with an APPM), it can continue to discharge beyond the 5-second cycle until the trigger is released or the power source is expended.

5-Second Discharge Cutoff and Trigger Reactivation Necessity for an X2 ECD with an APPM. The X2 ECD may be programmed with an optional automatic shut-down feature (the APPM) that will stop a continual trigger discharge at 5 seconds (even if the user continues to hold back the trigger) and require an additional trigger pull by the user for an additional cycle. The X2 ECD programmed with the APPM emits an audible alert 4 seconds into the ECD output cycle. Under high stress circumstances or noisy environments, the user may not hear the audible warning.

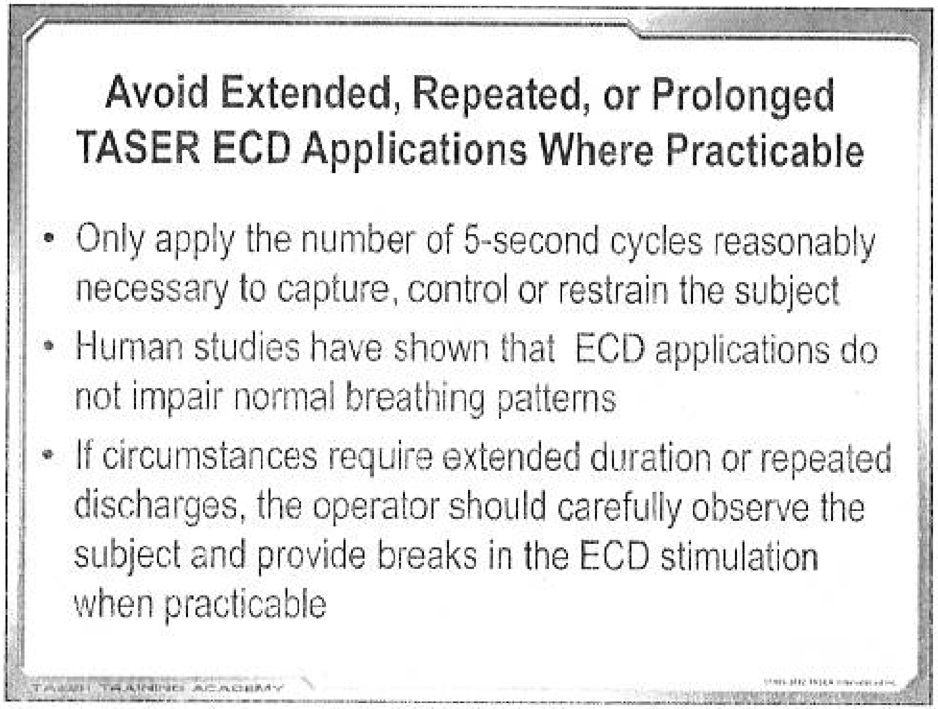

Avoid Extended, Repeated, or Prolonged TASER ECD Applications1 Where Practicable
Each trigger pull and/or 5-second cycle or discharge must be legally justified
Avoid extended, repeated, or prolonged ECD applications where practical
The application of the ECD is a physically stressful event
Attempt to minimize the physical and psychological stress to the subject
TASER TRAINING ACADEMY

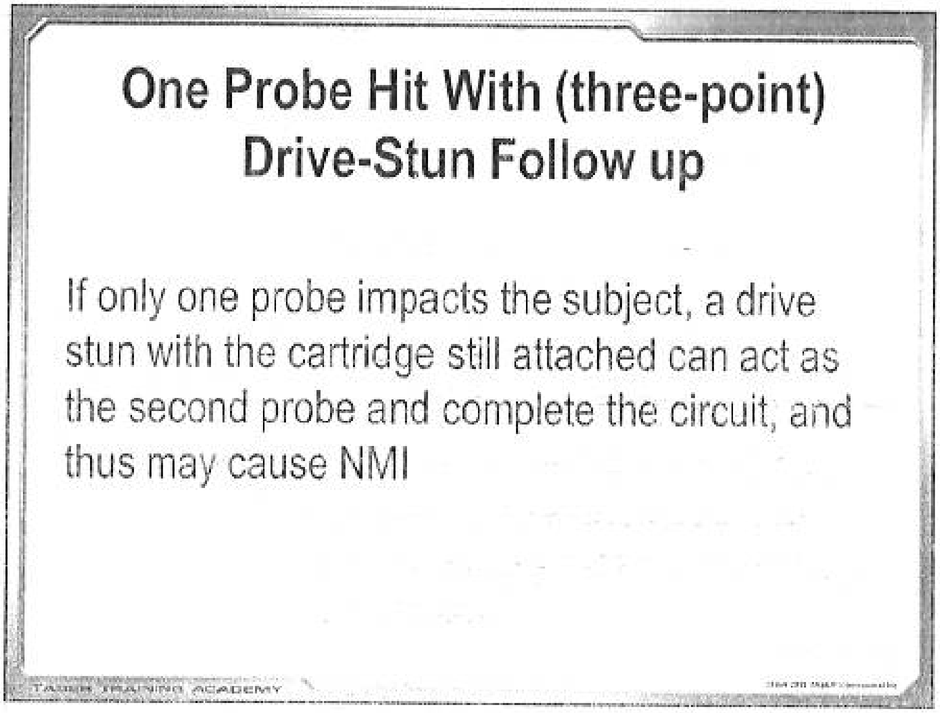
Remember, as with any application of force, each ECD 5 second cycle, deployment, or trigger pull must be legally justified.

1. Bozeman W, II WH, Heck J, Graham D, Martin B, Winslow J., Safety and Injury Profile of Conducted Electrical Weapons Used by Law Enforcement Officer Against Criminal Suspects, Annals of Emergency Medicine, January 2009, defines ECD discharge by duration as: "standard (5-second), prolonged (15-second), and extended (up to 45-second)" discharges.

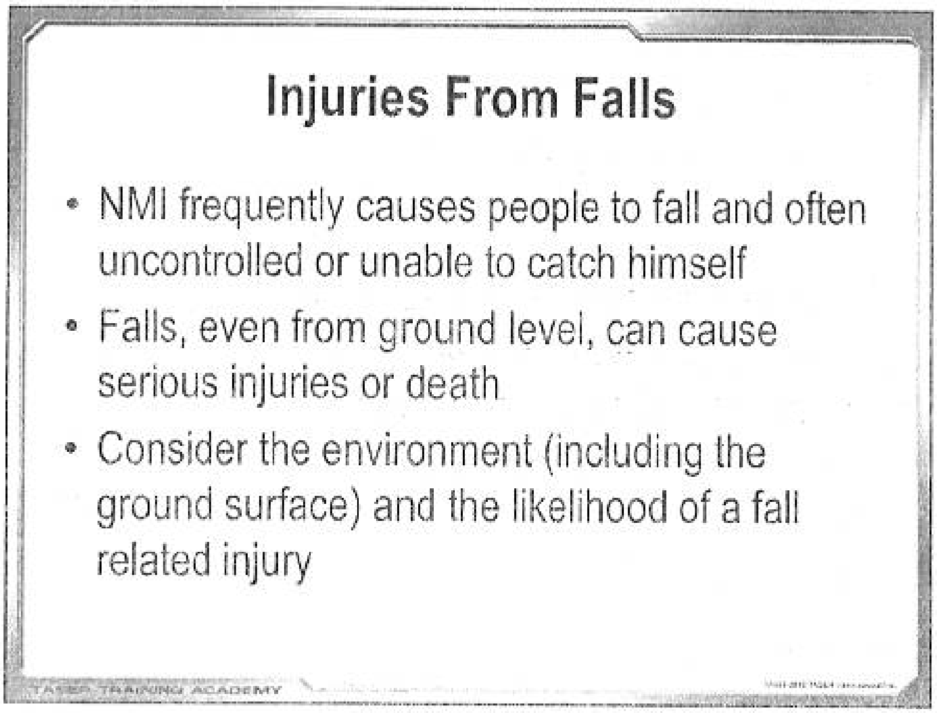
Avoid extended, repeated or prolonged ECD applications where practical. Tests on human volunteers have shown that breathing continues during ECD stimulation. Prolonged application of 15 seconds continuous or with breaks every 5 seconds in a trans-diaphragm application did not significantly impair either the tidal volume or respiratory rate. However, in tests on anaesthetized pigs, the pigs did not breathe during ECD stimulation. It was also noted in these pig tests that changes in conscious pigs could be different from those observed in anaesthetized animals.

It is important to note the need for effective tactics while subduing and restraining subjects. As demonstrated by training videos and voluntary exposure, the ECD stimulation is a stressful physical exertion. It is advisable to minimize the number of ECD applications by working quickly to restrain the subject. If repeated ECD applications are not having the desired effect, for whatever reason, it may be reasonable to redeploy to a different location on the body or transition to another force option rather than continue to expose the subject to the stress of further ECD applications if these applications are not making progress toward the goals of capturing, controlling, or restraining the subject. This may be especially true when dealing with persons in a health crisis such as excited delirium. It is advisable to minimize the physical and psychological stress to the subject.

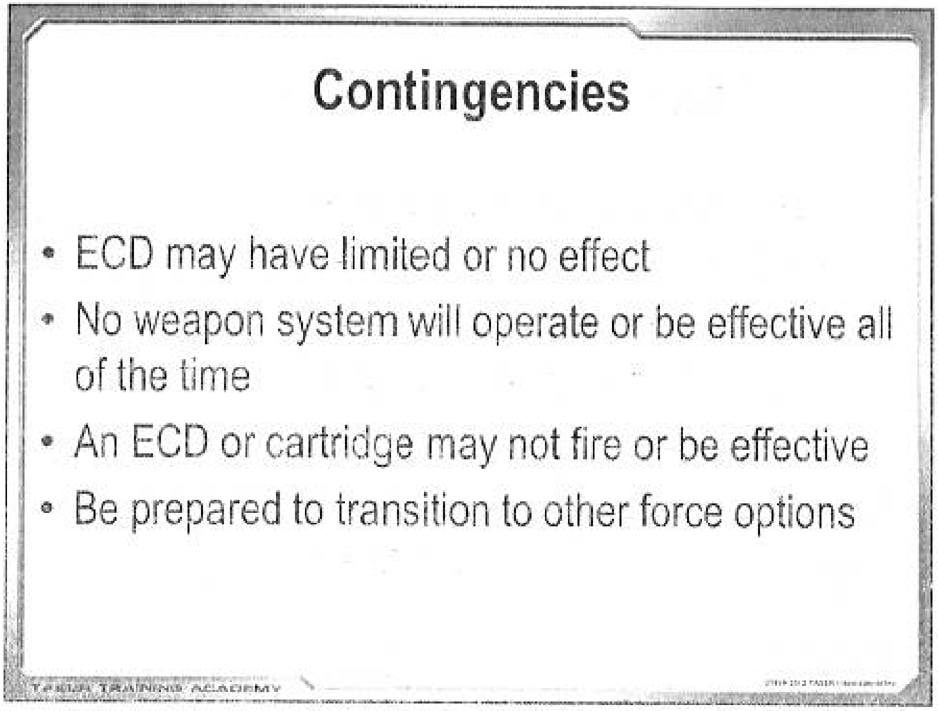

Avoid Extended, Repeated, or Prolonged TASER ECD Applications Where Practicable
• Only apply the number of 5-second cycles reasonably necessary to capture, control or restrain the subject
• Human studies have shown that ECD applications do not impair normal breathing patterns
• If circumstances require extended duration or repeated discharges, the operator should carefully observe the subject and provide breaks in the ECD stimulation when practicable
TASER TRAINING ACADEMY


One Probe Hit With (three-point) Drive-Stun Follow up
If only one probe impacts the subject, a drive stun with the cartridge still attached can act as the second probe and complete the circuit, and thus may cause NMI
TASER TRAINING ACADEMY

See, Panescu D, Kroll M, Stratbucker R. Medical safety of TASER conducted energy weapon in a hybrid 3-point deployment mode. Conf Proc IEEE Eng Med Biol Soc. 2009;1:3191-3194.


Injuries From Falls
• NMI frequently causes people to fall and often uncontrolled or unable to catch himself
• Falls, even from ground level, can cause serious injuries or death
• Consider the environment (including the ground surface) and the likelihood of a fall related injury
TASER TRAINING ACADEMY

Like many other force options, NMI frequently causes people to fall to the ground or other surface. They may or may not be able to catch or brace themselves and cushion the fall. Several people have suffered significant injuries including death from falling on a hard surface following an ECD exposure. Consider the environment the subject is standing on and the likelihood that a fall will result in injury.


Contingencies
• ECD may have limited or no effect
• No weapon system will operate or be effective all of the time
• An ECD or cartridge may not fire or be effective
• Be prepared to transition to other force options
TASER TRAINING ACADEMY

TASER ECDs are sophisticated electronic devices that are subjected to the challenging law enforcement environment. Have contingency plans for dealing with ineffective deployments or other applications. See current full TASER warnings, training, and product manual

1. **Limited Effects.** An ECD's effectiveness is determined by many factors including, but not limited to: absence of delivered electrical charge; probe locations; probe spread; subject's muscle mass; clothing; and movement. Even though a subject may be affected by an ECD in one part of his body the subject may maintain full muscle control of other portions of his body.

2. **ECD or Cartridge May Fail to Fire, Operate, or Be Effective.** No weapons system, tool, technique, force option, or ECD is always effective. If an ECD, cartridge, or accessory is inoperable, fails to function, or the intended ECD application is ineffective in achieving the desired effect, consider reloading and redeploying, using other force options, disengaging, or using other alternatives according to agency Guidance. The failure of the ECD to fire, operate, or be effective could result in death or serious injury.

3. **Prepare to Redeploy ECD or Use Backup Plan.** Always prepare to redeploy the ECD or use a backup plan. Be familiar with backup plans and acceptable alternatives in the event of ineffective ECD deployment.

Clearly Record the Incident

- If available, use on-officer point of view ("POV") incident recording equipment
- When safe, use radio to establish record of significant events with dispatch time logs (call in):
  - Immediately at end of ECD use
  - Immediately upon subject being handcuffed
  - Person's perceived medical status and condition (pulse (where taken), breathing, eyes open, alert, flailing, leaning, lying on left side, medical distress, etc.)

TASER TRAINING ACADEMY

Evidence Gathering*

Capture all relevant evidence, including:

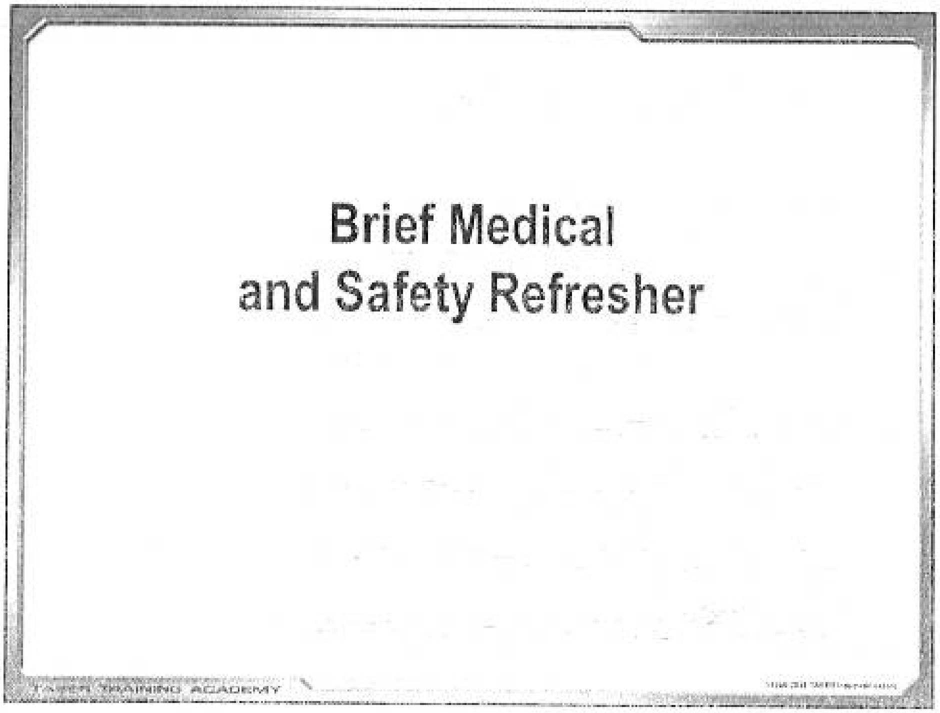
- ECD probes and wires
  - do not allow items to be placed into biohazard container or destroyed.
- Collect the clothing where ECD was applied
- Photograph injuries and lack of injuries
- Collect all relevant videos, audios, dispatch
- Expeditiously download ECD firing data

TASER TRAINING ACADEMY

Some agencies have moved away from collecting probes and wires as evidence. In most cases this is not a problem. However, if the subject has medical complications following arrest, or he files an excessive force complaint, analysis of the probes and wires may provide valuable information that may immediately exonerate the officer and the agency and avoid a lengthy and costly litigation process.

If the subject is treated by EMS or medical personnel, be sure to still collect the necessary evidence of the ECD use.

*Attend the TASER Evidence Collection and Analysis course for training on ECD evidence collection and analysis. Go to www.TASER.com/Training for a schedule of course dates and locations.


Brief Medical
and Safety Refresher
TASER TRAINING ACADEMY

This section is not a complete outline of ECD related medical research and information.

- Carefully review and research product manual and additional DVD materials
- Recommend all TASER ECD users conduct their own research, analysis and evaluation
- important to timely review all current product materials, updates, training bulletins, and warnings from TASER

Cardiac

- Risk of an ECD deployment, application, or discharge having a negative effect on a person's heart [capture, pacing, rate, and/or rhythm] is not zero
- The risk of an ECD causing cardiac arrest, including ventricular tachycardia or fibrillation, is sufficiently remote that making accurate estimates is very difficult. Current estimates of the risk are on the order of 1 in 100,000 applications (see notes)

TASER TRAINING ACADEMY

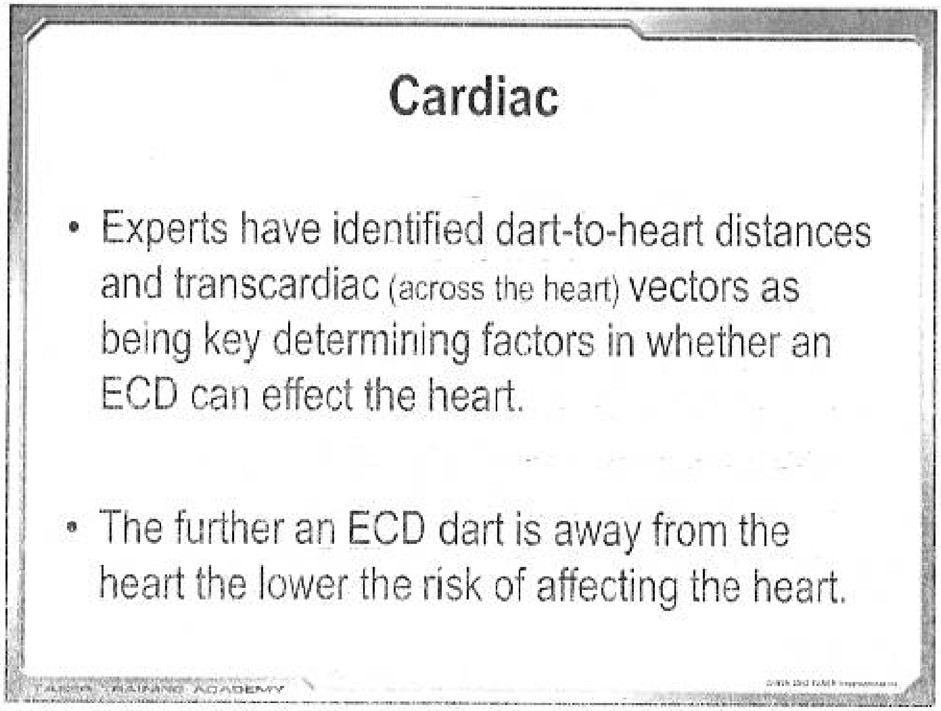
One risk of applying electricity to a human is the direct induction of ventricular fibrillation (VF). In addition to electrically induced direct VF induction, other risks include, but are no limited to: cardiac capture/pacing including for sufficiently long duration to deteriorate to VF, ventricular tachycardia ("VT") and through sufficiently significant physiological or metabolic effects to negatively impact the heart.

See. *Sun H, Haemmerich D, Rahko PS, Webster JG. Estimating the probability that the Taser directly causes human ventricular fibrillation. J Med Eng Technol. Apr 2010;34(3):178-191*

This paper describes the first methodology and results for estimating the order of probability for a TASER ECD directly causing human ventricular fibrillation (VF). The probability of an X26 ECD causing human VF was estimated using: (1) current density near the human heart estimated by using 3D finite-element (FE) models; (2) prior data of the maximum dart-to-heart distances that caused VF in pigs; (3) minimum skin-to-heart distances measured in erect humans by echocardiography; and (4) dart landing distribution estimated from police reports. The estimated mean probability of human VF was 0.000006 for data from a pig with no resection when inserting a blunt probe.

Also see:

- Kroll M, Lakkireddy D, Rahko P, Panescu D. Ventricular Fibrillation Risk Estimation for Conducted Electrical Weapons: Critical Convolutions. Medline IEEE 2011.
- McDaniel W, Stratbucker R, Nerheim M, Brewer JE. Cardiac safety of neuromuscular incapacitating defensive devices. Pacing Clin Electrophysiol. 2005 Jan;28 Suppl 1:S284-7. ("The safety index for an NMI discharge was significantly and positively associated with weight. Discharge levels for standard electrical NMI devices have an extremely low probability of inducing VF.")
- Ho JD, Dawes DM, Reardon RF, et al. Echocardiographic Evaluation of a TASER-X26 Application in the Ideal Human Cardiac Axis. Acad Emerg Med. Aug 10, 2008. Heart Rhythm 2008, 29th Annual Scientific Sessions, May 14-17, 2008, San Francisco, CA USA. Jeffrey D. Ho, MD, Donald M. Dawes, MD, Robert F. Reardon, MD, Anne L. Lapine, MD, Jeremy D. Olsen, MD, Benjamin J. Dolan, BA and James R. Miner, MD. Hennepin County Medical Center, Minneapolis, MN, Lompoc District Hospital, Lompoc, CA.
- Sloane CM, Chan TC, Levine SD, Dunford JV, Neuman T, Vilke GM. Serum troponin I measurement of subjects exposed to the TASER X-26. J Emerg Med 2008 Jul;35(1):29-32. Epub 2008 Mar 4.
- Ho, JD, Dawes, DM, et al. Absence of Electrocardiographic Change Following Prolonged Application of a Conducted Electrical Weapon in Physically Exhausted Adults. *Acad Emerg Med, 2007 (Supplement 1); 14: S128-S129.*
- Vilke G., Sloane, C., et al. Does the TASER Cause Electrical Changes in Twelve Lead ECG Monitoring of Human Subjects? *Acad Emerg Med, 2007 (Supplement 1); 14:S104*
- Levine, S., Sloane, C., Chan, T., et al. Cardiac of human subjects exposed to the TASER. *J Emerg Med, 2007.*
- Ho, J., Dawes, D., et al. Ultrasound measurement of cardiac activity during conducted electrical weapon application in exercising adults. *Ann Emerg Med, 2007; 50 (3): S108.*
- Ho JD, Miner JR, Lakkireddy DR, et al. Cardiovascular and physiologic effects of conducted electrical weapon discharge in resting adults. *Acad Emerg Med, 2006;13:589-595.*
- Barnes Jr., D., Winslow, J., et al. Cardiac Effects of the TASER X26 Conducted Energy Weapon. *Ann Emerg Med, 2006; 48* (Supplement):102monitoring
- TASER's current product warnings
- TASER ECD Index for additional published research on ECDs


Cardiac
• Experts have identified dart-to-heart distances and transcardiac (across the heart) vectors as being key determining factors in whether an ECD can effect the heart.
• The further an ECD dart is away from the heart the lower the risk of affecting the heart.

The VF probability for a given dart location decreased with the dart-to-heart horizontal distance (radius) on the skin surface. The further an ECD dart is away from the heart, the lower the risk of affecting the heart. The transcardiac vector (darts traversing or on both sides of the heart has also been stated as a potential concern.

Sun H, Haemmerich D, Rahko PS, Webster JG. Estimating the probability that the Taser directly causes human ventricular fibrillation. J Med Eng Technol. Apr 2010;34(3):178-191.

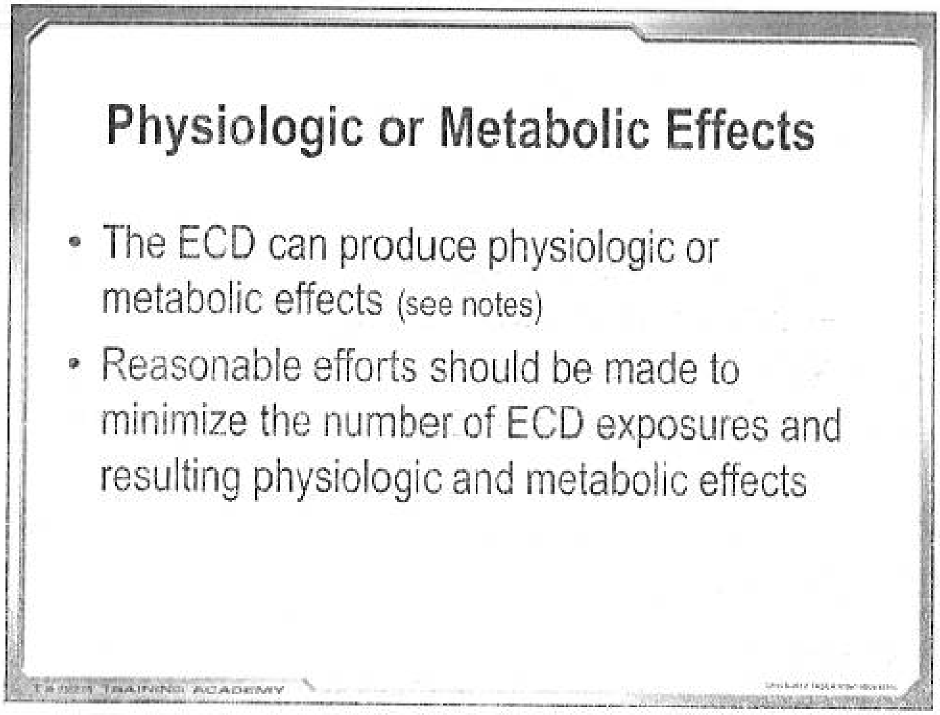
Also see:

- Kroll M, Lakkireddy D, Rahko P, Panescu D. Ventricular Fibrillation Risk Estimation for Conducted Electrical Weapons: Critical Convolutions. Medline IEEE 2011.
- McDaniel W, Stratbucker R, Nerheim M, Brewer JE. Cardiac safety of neuromuscular incapacitating defensive devices. Pacing Clin Electrophysiol. 2005 Jan;28 Suppl 1:S284-7. (The safety index for an NMI discharge was significantly and positively associated with weight. Discharge levels for standard electrical NMI devices have an extremely low probability of inducing VF.")

Cardiac

When possible, avoiding ECD chest shots reduces the risk of affecting the heart and avoids the controversy about whether ECDs do or do not affect the human heart.

TASER TRAINING ACADEMY


Physiologic or Metabolic Effects
• The ECD can produce physiologic or metabolic effects (see notes)
• Reasonable efforts should be made to minimize the number of ECD exposures and resulting physiologic and metabolic effects
TASER TRAINING ACADEMY

See current warnings, product manual, TASER training DVD, ECD Research Index, and www.TASER.com.

The ECD can produce physiologic or metabolic effects which include, but are not limited to, changes in: acidosis; adrenergic states; blood pressure; calcium, creatine kinase ("CK"); electrolytes (including potassium), heart rate and rhythm; lactic acid; myoglobin; pH; respiration; stress hormones or other biochemical neuromodulators (e.g., catecholamines).

Electrical energy delivered to a human has been studied and reported in the peer-reviewed medical, scientific, electrical, and engineering research for three centuries. Thus, there is a large amount of published research on the effects of delivered electrical charge on a human.

Physiologic or Metabolic Effects

Studies show ECD effects are usually comparable or less than from:

- Struggling
- Resisting
- Fighting
- Fleeing
- Some other force tools or techniques

In human studies of electrical discharge from a single ECD of up to 15 seconds, these effects on acidosis, CK, electrolytes, stress hormones, and vital signs have been comparable to or less than changes expected from physical exertion similar to struggling, resistance, fighting, fleeing, or from the application of some other force tools or techniques. Adverse physiologic or metabolic effects may increase risk of death or serious injury.

Higher Risk Populations

- ECD use has not been scientifically tested on:
  - Pregnant women
  - The infirm
  - The elderly
  - Small children
  - Low body-mass index (BMI) persons
- ECD use on these individuals could increase the risk of death or serious injury

TASER TRAINING ACADEMY

Although ECDs have been used in the field on members of each of these high risk populations, often without injury, it is unknown if these individuals are at a higher risk of injury or death due to a lack of scientific research.

Physiologically or Metabolically Compromised Persons

- Law enforcement personnel are called upon to deal with individuals in crises that are often physiologically or metabolically compromised and may be susceptible to arrest-related death ("ARD")
- The subject may already be at risk of death or serious injury as a result of pre-existing conditions, individual susceptibilities, or other factors
- Any physiologic or metabolic change may cause or contribute to death or serious injury
- Follow your agency's guidance and policies when dealing with physiologically or metabolically compromised persons

TASER TRAINING ACADEMY

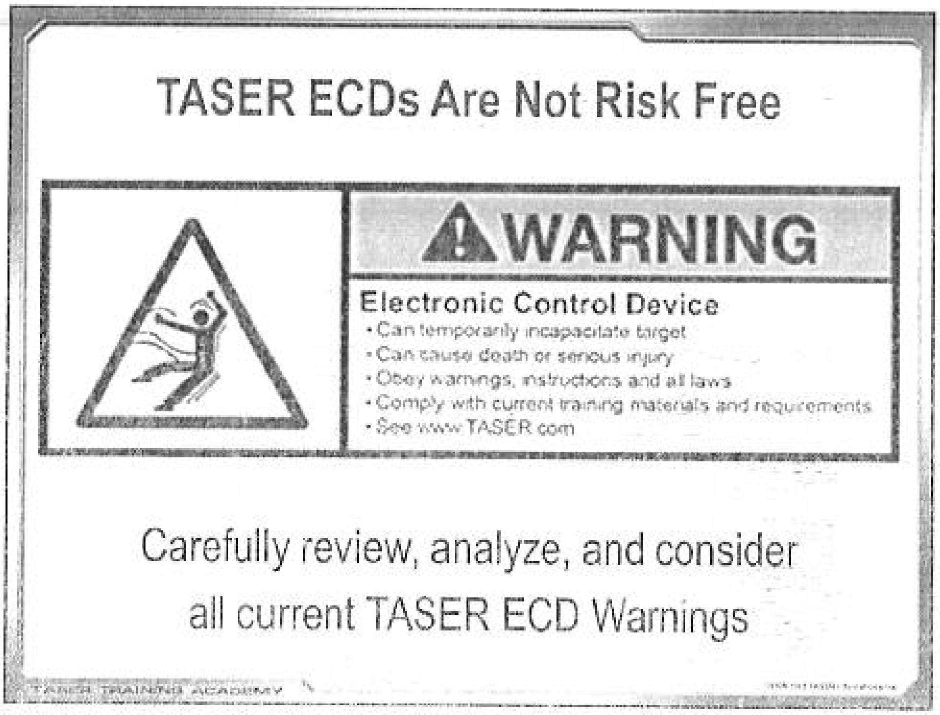
The factors that may increase susceptibility for an ARD have not been fully characterized but may include: a hypersympathetic state, autonomic dysregulation, capture myopathy, hyperthermia, altered electrolytes, severe acidosis, cardiac arrest, drug or alcohol effects (toxic withdrawal, sensitization to arrhythmias, etc), alterations in brain function (agitated or excited delirium), cardiac disease, pulmonary disease, sickle cell disease, and other pathologic conditions. These risks may exist prior to, during, or after law enforcement intervention or ECD use, and the subject may already be at risk of death or serious injury as a result of pre-existing conditions, individual susceptibility, or other factors. In a physiologically or metabolically compromised person any physiologic or metabolic change may cause or contribute to death or serious injury.

Independent Conclusions

Some of the latest TASER ECD Research can be viewed at:

- http://www.TASER.com/research-and-safety/science-and-medical

TASER TRAINING ACADEMY


TASER ECDs Are Not Risk Free
WARNING
Electronic Control Device
• Can temporarily incapacitate target
• Can cause death or serious injury
• Obey warnings, instructions and all laws
• Comply with current training materials and requirements
• See www.TASER.com
Carefully review, analyze, and consider
all current TASER ECD Warnings
TASER TRAINING ACADEMY

The Law Enforcement Warnings are contained in the instructor manual, the training DVD, and at www.TASER.com.

Check the TASER website frequently to ensure you have the most current copy of the warnings.

As required by TASER training, be sure to check the TASER website within 72 hours of using this material to ensure inclusion and use of the most current warnings information and materials.

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